

SOME WESTERN SPECIES OF PUCCINELLIA.

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IN the course of a recent revision of the northeastern species of *Puccinellia*, undertaken by Prof. Fernald and the writer,¹ considerable comparison with western material was necessary. Incidentally, this comparison showed that the western plants which have been passing as *P. airoides* comprise, besides true *P. airoides*, two other species, rather readily distinguishable from it and from each other. One of these, *P. lucida*, occurs also about the Gulf of St. Lawrence and was included in the revision above-mentioned. A second, apparently undescribed, is so clearly separable that it seems worth recording, though it is entirely western in its range and therefore outside our special field; and it is here proposed as *P. Cusickii*. Two sheets in the Gray Herbarium, one collected at Anderson Valley, Oregon, June 24, 1896, *Leiberg*, no. 2388, the other at Wilson's Station in the Warner Mts. of northeastern California, *Griffiths & Hunter*, no. 390, the latter referred by Hitchcock to *P. airoides* (*P. Nuttalliana*),² may represent still another undescribed species. All the plants mentioned are characterized by erose-serrulate lemmas, pubescent below and narrowed above to an acute or blunt apex, not truncate-obtuse as in the group of *P. distans*.

A synopsis of the three species here considered follows. All the specimens cited are in the Gray Herbarium, with the single exception of the specimen of *P. lucida* from British Columbia, which is in the Herbarium of the Geological Survey of Canada.

* *Anther* 0.5-1 (rarely 1.2) mm. long.

+ *Lemma* 1.5-2 mm. long, not lustrous; *panicle-branches* ascending or spreading.

P. AIROIDES (Nutt.) Wats. & Coult. in Gray, Man. ed. 6,668 (1890).³
—Yukon and Mackenzie to Montana, Nebraska and New Mexico.

Representative specimens examined:—MONTANA: Dillon, July 3, 1895, *Shear*, no. 331. WYOMING: open, wet, stony meadows, Centennial, Albany Co., July 26, 1900, *A. Nelson*, no. 7700. COLORADO: Doyle's, July 29, 1901, *C. F. Baker*, no. 637; Walsenburg, Huerfano

¹ See RHODORA xviii, 1.

² In Jepson, Fl. Cal. pt. 3, 162 (1912).

³ For full description and synonymy see RHODORA xviii, 16.

Co., July 10, 1896, *Clements*, no. 51. "ROCKY MTS." (Powell Expedition), 1868, *Vasey*, no. 615.

+ + *Lemma* 3-4 mm. long, thin and lustrous; panicle-branches often deflexed in age.

P. LUCIDA Fernald & Weatherby. RHODORA xviii, 16 (1916). Shores of the Gulf of St. Lawrence; Wyoming; British Columbia. Western specimens examined:— WYOMING: damp soil, Washington Ranch, June 29, 1901, *Merrill & Wilcox*, no. 63; in the margins of ponds, Mammoth Hot Springs, July 30, 1899, *A. & E. Nelson*, no. 6017 (this number, as represented in the Gray Herbarium, is partly *P. lucida*, partly *P. airoides*). BRITISH COLUMBIA: salt marshes, Newcastle Island, Departure Bay, July 10, 1908, *J. Macoun*, herb. Geol. Surv. Can. no. 81,001.

* * *Anther* 1.5-1.8 mm. long; *lemma* 2.5-3 mm. long; panicle-branches ascending or spreading, lax and flexuous.

P. Cusickii, n. sp. Caespitosa perennis, 3.5-10 dm. alta viridis; culmis glabris laevibusque; foliorum caulinarum laminis 3-14.5 cm. longis 1-2 mm. latis exsiccatis plus minusve involutis subtus laevibus supra minute scabris valde nervatis, marginibus scabriusculis; ligula 1.5-2.5 mm. longa; panicula 0.4-3.5 dm. longa, plerumque exserta, rachi scabra, ramis filiformibus 2-5-verticillatis scabris adscendentibus vel patentibus laxis subflexuosis imprimis supra mediam partem floriferis, infimis usque ad 13 cm. longis; pedicellis scabris; spiculis 5-9 mm. longis laxe 3-6-floris saepe purpurascens, rachilla glabra inter flores in anthesi evidente; glumis tenuibus supra hyalinis minute eroso-serrulatis, inferiore 1-1.5 mm. longa anguste ovata ad apicem acutum angustata obscure 1-nervata, superiore 2-2.5 mm. longa ovata acuta obscure 3-nervata; lemmatibus 2.5-3 mm. longis late ovatis ad apicem acutum vel subacutum plus minusve abrupte angustatis infra subcoriaceis supra hyalinis et eroso-serrulatis basin versus pubescentibus obscure 5-nervatis; paleis lemmata aequantibus lanceolatis ad apicem fimbriato-emarginatum paullum angustatis, nervis supra scabris infra ciliatis; antheris (exsiccatis) 1.5-1.8 mm. longis purpureis; caryopsi immatura 1.6 mm. longa.

Cespitose perennial, green: culms 3.5-10 dm. high, rather slender, little if at all geniculate, smooth and glabrous: cauline leaves 3-14.5 cm. long, 1-2 mm. wide, in dried specimens more or less involute, smooth beneath, the margins and the prominently nerved upper surface minutely scabrous; ligule hyaline, 1.5-2.5 mm. long: panicle usually exserted, in small specimens short (down to 4 cm.) and narrow, in well-developed plants diffuse, ovoid-pyramidal, up to 3.5 dm. long; the rachis and branches scabrous, the latter 2-5 together, capillary, ascending or spreading, lax and somewhat flexuous, floriferous chiefly above the middle, the lowest up to 13 cm. long: spikelets often purple-tinged, 5-9 mm. long, loosely 3-6-flowered, the glabrous rachilla visible between the lemmas at anthesis: glumes thin, hyaline and

minutely erose-serrulate above; the first 1–1.5 mm. long, obscurely 1-nerved, rather narrowly ovate, tapering to an acute tip; the second 2–2.5 mm. long, obscurely 3-nerved, ovate, acute, the mid-nerve often minutely scabrous above: lemmas 2.5–3 mm. long, broadly ovate, rather abruptly narrowed to an acute or acutish tip, firm in texture below, hyaline and erose-serrulate above, pubescent toward the base, obscurely 5-nerved: palea about equalling the lemma, lanceolate, slightly narrowed to the fimbriate-emarginate tip, scabrous on the nerves above, ciliate below: anthers in dried specimens 1.5–1.8 mm. long (somewhat longer when boiled out and perhaps in fresh material), purple: immature grain 1.6 mm. long.—“Saskatchewan” and Assiniboia to Wyoming and eastern Oregon. “SASKATCHEWAN”: *Bourgeau*, 1858. ASSINIBOIA: salt marshes, Cypress Hills, July 31, 1880, *John Macoun*. WYOMING: Little Laramie River, 1897, *T. A. Williams*, no. 2291. OREGON: in alkaline alfalfa meadows, Grande Ronde Valley, 930 m. alt., June 30, 1908, *Cusick*, nos. 3269 and 3271 (the latter TYPE in Gray Herb.)

In the character of its inflorescence and in its large anther resembling *P. Lemmoni*, but lacking the dense basal tufts of involute-setaceous leaves which seem to be characteristic of that species and differing further in its pubescent lemma and glabrous rachilla. In *P. Lemmoni* the lemma is glabrous, but the callus pubescent and the rachilla of the spikelets is more or less pubescent or scabrous.

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VARIANTS OF *ASTER HERVEYI*.

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IN examining a number of specimens of *Aster Herveyi*, the writer discovered some forms differing from the described type especially in the size and shape of the leaves, which varied from broadly ovate, acute at tip, and rounded or slightly heart-shape at base to ovate-lanceolate or lanceolate; some even tapering at base into a more or less margined petiole. The broader leaf-form resembles *Aster macrophyllus* and is found most abundant in its neighborhood. The narrower leaf-form is found in dryer soil where *Aster spectabilis* is more common. These two forms often are so similar to the above species as to be scarcely distinguishable. *A. macrophyllus* and *A. spectabilis* are usually found in the vicinity of *A. Herveyi*. The same root of *A.*